

REMARKS

Reconsideration and allowance are respectfully requested.

Claims 1-15 are pending. The amendments are fully supported by the original disclosure and, thus, no new matter is added by their entry.

35 U.S.C. 112 – Definiteness

Claims 3-4 were rejected under Section 112, second paragraph, as being allegedly "indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention." Applicants traverse because the claims are corrected as required by the Examiner, and this moots the rejections.

The "other organic products" refer to organic products other than the recited epoxide of the olefinic organic compound, aldehydes, and carboxylic acids.

The olefins referred to by "other linear or non-linear" are normally gaseous and normally liquid olefins, norbornene, cyclopentene, cyclooctene, allylchloride, allyl alcohol and vinyl cyclohexene.

Applicants request withdrawal of the Section 112, second paragraph, rejections because the pending claims are clear and definite.

35 U.S.C. 103 – Nonobviousness

Claims 1-15 were rejected under Section 103(a) as allegedly unpatentable over Rothenberg et al. (J. Mol. Catalysis A: Chem. 136:253-262, 1998) in view of Kaplan (U.S. Patent 3,523,956). Applicants traverse.

The pending claims require a biphasic process in which the catalyst is present in dissolved form in the aqueous phase. In contrast, Rothenberg et al. disclose at page 256 that the catalyst CrO₃ is extracted into the organic phase (i.e., dichloromethane) by the organic hydroperoxide TBHP and various pyridines.

The failure of Rothenberg et al. to disclose the claimed invention is not remedied by the attempt to modify that disclosure with Kaplan, which is silent on whether the metal catalyst is in an aqueous or organic phase during the reaction but does disclose that catalyst is removed in the aqueous phase at col. 5, lines 45-46. In this respect, the

references cited in the Action do not appear to be capable of combination. The Action also does not explain why one of ordinary skill in the art would have been motivated to remove CH₂Cl₂ from the reaction of Rothenberg et al. or what would have motivated the choice to maintain the catalyst in the aqueous phase in contravention of Rothenberg et al. In view of the teaching away from Applicants' invention by Rothenberg et al., one of ordinary skill in the art would not have been motivated to make the combination that was proposed in the Action.

Moreover, Rothenberg et al. disclose using CrO₃ with pyridines as a co-catalyst to inhibit epoxidation and to enhance oxidation. This also teaches away from Applicants' invention, which is concerned with catalyzing epoxidation of olefinic compounds, and there is no evidence provided in the Action for why one of ordinary skill in the art would have been motivated to remove pyridine from the reaction (especially when the objectives of Applicants' epoxidation and the oxidation reaction of Rothenberg et al. are so dissimilar).

Furthermore, Kaplan does not disclose a chromate or dichromate catalyst. The Cr catalyst of Kaplan appears to be limited to forms like finely divided metal and other compounds without any description of chromate or dichromate forms (cf. the section with the heading "THE CATALYST" at cols. 4-5). Chromium is not even a preferred metal in catalysts disclosed in Kaplan at col. 5, lines 14-22. And the Action fails to provide any evidence that one of ordinary skill in the art would have been motivated to substitute chromate or dichromate for the catalyst in the reactions disclosed in Kaplan.

Withdrawal of the Section 103 rejection is requested because the invention as claimed would not have been obvious to a person of ordinary skill in the art at the time it was made.

Conclusion

Having fully responded to all of the pending rejections contained in this Office Action, Applicants submit that the claims are in condition for allowance and earnestly

solicit an early Notice to that effect. The Examiner is invited to contact the undersigned if any further information is required.

Respectfully submitted,

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